

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) A method of providing location services (LCS), comprising:
 - receiving a request for location information for a mobile station from a location client;
 - determining whether ~~present~~ suitable location information is available from a cache;
 - performing authorization for location ~~determination~~ distribution based on a first security procedure to determine whether the location client is authorized to receive the location information for the mobile station via a first network entity;
 - performing authentication for the location ~~determination~~ distribution based on the first security procedure to authenticate the location client;
 - ~~performing location determination via a first set of at least one network entity to obtain location information for the mobile station responsive to the request for the location information when present location information for the mobile station is unavailable;~~
 - performing authorization for location ~~disclosure~~ determination based on a second security procedure, independent of the first security procedure, to determine whether a second network entity is authorized for the location information for the mobile station;
 - performing authentication for the location ~~disclosure~~ determination based on the second security procedure to authenticate the second network entity; ~~and~~
 - performing location determination to obtain location information for the mobile station responsive to the request for the location information when the suitable location information for the mobile station is unavailable; and
 - performing location ~~disclosure~~ distribution via ~~[[a]] the first and second set of at least one network entities entity~~ to provide the location information for the mobile station responsive to the request for the location information, and skipping the location determination when the present location information for the mobile station is available from the cache.

2. (Canceled)

3. (Currently Amended) The method of claim 1, wherein the ~~first~~ second security procedure is based on an MD-5 algorithm and the ~~second~~ first security procedure is based on an Authentication and Key Agreement (AKA) procedure.

4. (Currently Amended) The method of claim 1, further comprising:
performing a first session key setup to obtain a first session key, wherein the first session key is used for authentication and encryption of messages exchanged with the first ~~set of at least one~~ network entity; and

performing a second session key setup to obtain a second session key, wherein the second session key is used for authentication and encryption of messages exchanged with the second ~~set of at least one~~ network entity.

5. (Original) The method of claim 1, wherein the location determination and the location disclosure are performed in two separate LCS sessions.

6. (Canceled)

7. (Currently Amended) The method of claim 1, wherein the ~~first set of at least one~~ second network entity is located in a serving network for the mobile station and the ~~second set of at least one~~ first network entity is located in a home network for the mobile station.

8. (Currently Amended) The method of claim 1, wherein the location ~~disclosure~~ distribution is performed by a location client and a location server.

9. (Currently Amended) The method of claim 8, wherein the ~~second set of at least one~~ first network entity includes an LCS provider, and wherein the location client is located in the mobile station or the LCS provider.

10. (Currently Amended) The method of claim 8, wherein the ~~second set of~~ **at least one first** network entity includes an LCS server, and wherein the location server is located in the mobile station or the LCS server.

11. (Currently Amended) The method of claim 1, wherein the ~~first set of at least one second~~ network entity includes a position determining entity (PDE).

12. (Currently Amended) The method of claim 11, wherein the ~~first set of at least one second~~ network entity further includes a serving mobile positioning center (SMPC).

13. (Currently Amended) The method of claim 11, wherein the ~~first set of at least one second~~ network entity further includes a home authentication, authorization, and accounting entity (H-AAA).

14. (Currently Amended) The method of claim 1, wherein the ~~second set of at least one first~~ network entity includes an LCS server.

15. (Currently Amended) The method of claim 14, wherein the ~~second set of at least one first~~ network entity further includes a home authentication, authorization, and accounting (H-AAA) entity.

16. (Original) The method of claim 1, wherein the location information for the mobile station comprises a location estimate for the mobile station.

17. (Previously Presented) The method of claim 16, wherein the location information for the mobile station further comprises an uncertainty for the location estimate for the mobile station.

18 - 28. (Canceled)

29. (Currently Amended) An apparatus comprising:
means for receiving a request for location information for a mobile station **from a location client;**

means for performing a first session key setup to obtain a first session key, wherein the first session key is used for authentication and encryption of messages exchanged ~~with~~ between a first ~~set of at least one~~ network entity and the mobile station;

means for performing location determination via a first secure LCS session using the first session key to obtain location information for the mobile station responsive to the request for the location information when present location information for the mobile station is unavailable from a cache;

means for performing a second session key setup to obtain a second session key, wherein the second session key is used for authentication and encryption of messages exchanged ~~with~~ between a second ~~set of at least one~~ network entity and the location client; and

means for performing location ~~disclosure~~ distribution via a second secure LCS session using the second session key, independent of the first secure LCS session, to provide the location information for the mobile station to the location client responsive to the request for the location information, and skipping the location determination when the present location information for the mobile station is available from the cache.

30. (Currently Amended) A ~~method of providing location services (LCS),~~
comprising computer program product residing on a processor-readable medium and
comprising processor-readable instructions configured to cause the processor to:

~~performing authorization for location determination responsive to a first request for~~
~~location information based on a first security procedure;~~

~~authenticating messages between a mobile station and a serving network~~
authenticate, based on a first session obtained ~~in the~~ using a first security procedure, a location
client requesting location information of a mobile station via a home network;

~~obtaining~~ obtain location information for the mobile station responsive to the
authenticated first request for location information for the mobile station when present location
information for the mobile station is unavailable from a cache;

~~performing authorization for location disclosure~~ authenticate the mobile station for
location determination responsive to the ~~first~~ request for location information based on a
second security procedure, independent of the first security procedure; and

~~providing~~ provide, from a serving network, the location information to ~~a first~~
~~application~~ the location client responsive to the ~~first~~ request for the location information for the
mobile station, and ~~skipping the~~ skip obtaining the location information when the present
location information for the mobile station is available from the cache;

~~performing authorization for location disclosure responsive to a second request for~~
~~location information based on the second security procedure;~~

~~authenticating location disclosure messages exchanged between the mobile station~~
~~location client and a home network using a second session obtained in the second security~~
~~procedure; and~~

~~providing the location information to a second application responsive to the second~~
~~request for the location information for the mobile station, and skipping the obtaining the~~
~~suitable location information when the present location information for the mobile station~~
~~is available from the cache.~~

31 - 43. (Canceled)

44. (Currently Amended) A method of providing location services (LCS),
comprising:

receiving a request, from a location client, for location disclosure of a mobile station;
authenticating ~~and authorizing~~ the request using a secure disclosure session key and a
secure disclosure session between a network and the location client;

determining whether cached location information is available;

if the cached location information is available, responding to the request for location
disclosure with the location information in the secure disclosure session;

if the cached location information is not available, initiating a request for location
determination;

establishing a secure determination session, between the network and the mobile
station, independent of the secure disclosure session, to authenticate the request for location
determination; and

communicating location information within the secure determination session.

45. (Currently Amended) The method of claim 44, wherein authenticating **and authorizing** the request comprises:

- receiving a request for the secure disclosure session key; and
- providing the secure disclosure session key in response to successful authentication and validation of the request for the secure session key.

46. (New) The method of claim 44 wherein authenticating the request comprises mutually authenticating the location client and a first network entity of the network, and wherein establishing the secure determination session comprises mutually authenticating the mobile station and a second network entity of the network.

47. (New) The method of claim 46 wherein the first and second network entities are a single network entity.

48. (New) A system in a wireless communication network, the system comprising:

- a home network server configured to:
 - receive a request from a location client for location disclosure of a mobile station;
 - authenticate the request using a secure disclosure session key and a secure disclosure session with the location client;
 - determine whether cached location information is available;
 - respond to the request for location disclosure with the location information in the secure disclosure session if the cached location information is available; and
 - initiate a request for location determination if the cached location information is not available; and
- a serving network server communicatively coupled to the home network server and configured to:
 - establish a secure determination session, independent of the secure disclosure session, to authenticate the mobile station;

determine the location information of the mobile station; and
communicate the location information to the home network server

49. (New) The system of claim 48, wherein the home network server is configured to perform mutual authentication with the location client and to provide the location information to the location client, and wherein the serving network server is configured to perform mutual authentication with the mobile station.

50. (New) The system of claim 48 wherein the home and serving network servers are a single server.